



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,231	10/17/2003	Muhammed Ayman Shibib	37-6	2478
7590	06/08/2005		EXAMINER	
Ryan, Mason & Lewis, LLP 90 Forest Avenue Locust Valley, NY 11560		ECKERT II, GEORGE C		
		ART UNIT		PAPER NUMBER
		2815		

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/688,231	SHIBIB ET AL. 
	Examiner	Art Unit
	George C. Eckert II	2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 21 March 2005.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-7,9-16 and 22-29 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 1-7,9-16 and 22-28 is/are allowed.

6) Claim(s) 29 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 09 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment dated March 21, 2005 in which claims 1, 9 and 22 were amended, claims 8 and 17-21 were canceled and claims 26-29 newly added has been entered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by 2004/00222461 to Peyre-Lavigne et al. (hereinafter "Lavigne"). Lavigne teaches in figure 6 an LDMOS device comprising:

a semiconductor layer comprising a substrate 66 of a first conductivity type (p-type) and an epitaxial second layer 12 of second conductivity type (n-type) formed on the substrate (see para. 0032);

a first source/drain region 4 of the second conductivity type formed in the second layer 12 proximate an upper surface of the second layer;

a second source/drain region 8 of the second conductivity type formed in the second layer proximate the upper surface of the second layer and spaced laterally from the first source/drain region;

a gate 6 formed above the second layer proximate the upper surface of the second layer and at least partially between the first and second source/drain regions; and

a plurality of electrically conductive trenches 62 formed in the second layer between the gate 6 and the second source/drain region 8, the trenches being formed proximate the upper surface of the semiconductor layer and extending substantially vertically through the second layer to the substrate 66 (see fig. 6, showing the trench 62 including the dashed lines extending as claimed, see para. 0030), the trenches being spaced apart relative to one another and to a channel region 10 formed in the device below at least a portion of the gate and between the first and second source/drain region.

That the trenches are “configured so as to control a curvature of the channel region” is functional language. Because Lavigne teaches a structure identical to that instantly claimed, Lavigne is considered capable of also controlling the channel’s curvature. Furthermore, as acknowledged in applicant’s specification, controlling the spread of the depletion layer and distribution of the electric field proximate the gate controls the channel’s curvature. The trenches of Lavigne will certainly control the depletion layer as they are P-type trenches formed in an N-type layer 12, proximate the gate. Also, as quoted by applicant (response, p. 11), Lavigne teaches that the trenches decrease the electric field between the source and drain. In all, Lavigne teaches the claimed structural elements and is capable of performing the claimed function. As such, Lavigne anticipates claim 29.

***Allowable Subject Matter***

3. Claims 1-7, 9-16 and 22-28 are allowed.

*Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George C. Eckert II whose telephone number is (571) 272-1728.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax number is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
GEORGE ECKERT  
PRIMARY EXAMINER